

assign, based upon said information, a separate first dichotomous value to each predictive factor of said set of predictive factors that said determining step determines is indicative of said high risk of said individual utilizing said healthcare services at said predetermined level within said prospective time span;

assign, based upon said information, a separate second dichotomous value to each predictive factor of said set of predictive factors that said determining step determines is not indicative of said high risk of said individual utilizing said healthcare services at said predetermined level within said prospective time span, and

generate, based upon a predetermined predictive model and said values assigned to said predetermined set of predictive factors, a risk level of said individual utilizing healthcare services at a predetermined level within a prospective time span.

25. (Amended) The system of claim 11, wherein the risk level generated is a risk level of said individual utilizing healthcare services at a predetermined level within a prospective time span between a present date and a first reference date.

#### REMARKS

##### Claim Objection

Claim 25 was objected to for grammatical incorrectness and has been amended to overcome the objection.

##### New Matter Objections

Claims 21-27 were added by the previous official action response. The Examiner was not able to find any support for the new claims in the specification as originally filed. Therefore, the Applicant hereby specifically points out support in the specification for the following claims. With respect to claim 21, the Examiner is directed to page 9, lines 1-13, and page 11, lines 5-10. With respect to claim 22, the Examiner is directed to page 11, lines 11-12. With respect to claim 23, the Examiner is directed to page 9, lines 1-13, and page 11, lines 5-10. With respect to claim 24, the Examiner is directed to page 9, lines 1-13, and page 11, lines 5-10. With respect to claim 25, the Examiner is directed to page 11, lines 11-12. With respect to claim 26, the Examiner is directed to page 9, lines 1-13, and page 11, lines 5-10. With respect to claim 27, the Examiner is directed to page 11, lines 11-12.

## Prior Art Rejections

### A. U.S. Patent No. 5,976,082

Claims 1, 5, 8 – 11, 14 – 16, 19, and 21-27 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,976,082 to Wong et al. (hereinafter “Wong”). Wong discloses a method for identifying at risk patients diagnosed with congestive heart failure. Wong teaches a computer-implemented technique, including database processing, to identify at risk congestive heart failure patients where information about the patients exists in a claims database. Wong samples only patients who are known to already have congestive heart failure.

The Wong system utilizes a plurality of independent variables representing potential predictors of adverse health outcomes to predict outcomes represented as dependent variables. Wong scans the claims data and extracts information for independent variables such as Age, Gender, HMO membership, site code of first CHF diagnosis, presence of Ischemic Heart disease, Number of ACE inhibitor prescriptions, and many others (see Table 1, cols 12 & 13). These values, which are indicative only of medical information values recorded in claims, are put into an algorithm.

The algorithm outputs values for dependent variables such as hospitalization for CHF, high cost, and death. These dependent variable outcomes can be represented by dichotomous values indicating the event either happening/existing or not happening/existing.

#### 1. Claim 1

Claim 1 has been amended to include limitations from former claim 5. Amended claim 1 requires, among other things, the step of “determining, ... whether a first predictor factor is indicative of a high risk of said individual utilizing said healthcare services at a predetermined level within a prospective time span; assigning, based upon said information, a first dichotomous value to said separate value for said first predictive factor if said determining step determines that said first predictor factor is indicative of said high risk of said individual utilizing said healthcare services at said predetermined level within said prospective time span” and “assigning, based upon said information, a second dichotomous value to said first predictive factor if said determining step determines that said first predictor factor is not indicative of said high risk of said individual utilizing said healthcare services at said predetermined level within said prospective time span.”

Wong fails to teach the step of determining whether a certain predictive factor is itself indicative of a risk. Wong takes many factors as shown by independent variables and

inserts them into an algorithm without any analysis as to whether any one of the independent variables itself is indicative of a risk. The analysis of Wong determines whether a group of independent variables as a whole is indicative of any of the dependent variables.

Furthermore, Wong does not teach the step of assigning a first or second value for a factor in response to a determining step. More specifically, Wong fails to assign a first or second dichotomous value to a predictor factor if the information collected for that predictor factor is indicative of high or low risk. As stated above, the analysis of whether an individual factor is indicative of a risk is not performed by Wong. Therefore, as Wong does not teach assigning a first or second value to a predictor factor, Wong certainly can not teach assigning a dichotomous value to a predictor factor based on analysis Wong does not perform.

Wong fails to teach or suggest “determining, ... whether a first predictor factor is indicative of a high risk of said individual utilizing said healthcare services at a predetermined level within a prospective time span; assigning, based upon said information, a first dichotomous value to said separate value for said first predictive factor if said determining step determines that said first predictor factor is indicative of said high risk of said individual utilizing said healthcare services at said predetermined level within said prospective time span,” and “assigning, based upon said information, a second dichotomous value to said first predictive factor if said determining step determines that said first predictor factor is not indicative of said high risk of said individual utilizing said healthcare services at said predetermined level within said prospective time span.” Therefore, the Applicant believes that claim 1 is presented in condition for allowance and respectfully requests reconsideration of claim 1 with respect to Wong.

2. Claims 8 - 10

Claims 8 - 10 depend from claim 1. Because claim 1 is believed to be allowable, claims 8 – 10 are also believed to be allowable.

3. Claim 11

Claim 11 has been amended to include limitations similar to those discussed above with respect to amended claim 1. Applicant respectfully asks for reconsideration of claim 11 in light of the arguments put forth with respect to claim 1. Applicant believes that claim 11 is presented in condition for allowance and respectfully requests reconsideration of claim 11 with respect to Wong.

4. Claims 14 and 15

Claims 14 and 15 depend from claim 11. Because claim 11 is believed to be allowable, claims 14 and 15 are also believed to be allowable.

5. Claim 16

Claim 16 has been amended to include limitations similar to those discussed with respect to amended claims 1 and 11. Applicant respectfully asks for reconsideration of claim 16 in light of the arguments put forth with respect to claim 1. Applicant believes that claim 16 is presented in condition for allowance and respectfully requests reconsideration of claim 16 with respect to Wong.

6. Claim 19

Claim 19 depends from claim 16. Because claim 16 is believed to be allowable, claim 19 is also believed to be allowable.

7. Claims 21-27

Claims 21-27 each depend from one of claims 1, 11, and 16. Because claims 1, 11, and 16 are believed to be allowable, claims 21-27 are also believed to be allowable.

B. U.S. Patent No. 5,976,082 in view of U.S. Patent No. 5,486,999

Claims 2-3 and 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wong in view of U.S. Patent No. 5,486,999 to Mebane.

1. Claims 2-3

Claims 2-3 depend from claim 1. Because claim 1 is believed to be allowable, claims 2-3 are also believed to be allowable.

2. Claim 17

Claim 17 depends from claim 16. Because claim 16 is believed to be allowable, claim 17 is also believed to be allowable.

C. U.S. Patent No. 5,976,082 in view of U.S. Patent No. 6,269,339

Claims 4, 12-13, and 18 were under 35 U.S.C. 103(a) as being unpatentable over Wong in view of U.S. Patent No. 6,269,339 to Silver.

1. Claim 4

Claim 4 depends from claim 1. Because claim 1 is believed to be allowable, claim 4 is also believed to be allowable.

2. Claims 12 and 13

Claims 12 and 13 depend from claim 11. Because claim 11 is believed to be allowable, claims 12 and 13 are also believed to be allowable.

3. Claim 18

Claim 18 depends from claim 16. Because claim 16 is believed to be allowable, claim 18 is also believed to be allowable.

D. U.S. Patent No. 5,976,082

Claims 6 and 7 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wong. Claim 6 and 7 depend from claim 1. Because claim 1 is believed to be allowable, claims 6 and 7 are also believed to be allowable.

Final Remarks

It should be appreciated that the amendment to claim 25 was only for grammatical purposes and does not alter the scope of the claim. Therefore, the amendment made was not a limiting amendment and was not made for reasons relating to patentability. Applicants submit that the application is in condition for allowance. It is respectfully requested that the Examiner so find and issue a Notice of Allowance in due course. If necessary, the Examiner is asked to call Applicants' attorney, Ryan C. Barker, at (317) 684-5295 to address any outstanding issues to expedite the prosecution of this application for all parties.

If necessary, Applicants request that this Response be considered a request for an extension of time for a time appropriate for the response to be timely filed. Applicants request that any required fees needed beyond those submitted with this Response be charged to the account of Bose McKinney & Evans, Deposit Account Number 02-3223.

Respectfully submitted,



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## ATTACHMENT A

1. (Amended) A method of managing healthcare services, comprising the steps of:

collecting information from an individual for a predetermined set of predictive factors;

[assigning, based upon said information from said individual, a separate value to each predictive factor of said predetermined set of predictive factors;]

determining, based upon said information, whether a first predictor factor is indicative of a high risk of said individual utilizing said healthcare services at a predetermined level within a prospective time span;

assigning, based upon said information, a first dichotomous value to said first predictive factor if said determining step determines that said first predictor factor is indicative of said high risk of said individual utilizing said healthcare services at said predetermined level within said prospective time span;

assigning, based upon said information, a second dichotomous value to said first predictive factor if said determining step determines that said first predictor factor is not indicative of said high risk of said individual utilizing said healthcare services at said predetermined level within said prospective time span; and

generating, based upon a predetermined predictive model and said [separate values] value assigned to said [predetermined set of predictive factors] first predictive factor, a risk level of said individual utilizing healthcare services at a predetermined level within a prospective time span.

7. (Amended) The method of claim 1, wherein [said assigning step comprises the steps of

determining, based upon said information, whether each predictive factor of said set of predictive factors is indicative of a high risk of said individual utilizing said healthcare services at said predetermined level within said prospective time span;]

[assigning, based upon said information, a "1" to each said separate value for each predictive factor of said set of predictive factors that said determining step determines is indicative of said high risk of said individual utilizing said healthcare services at said predetermined level within said prospective time span; and

assigning, based upon said information, a "0" to each said separate value for each predictive factor of said set of predictive factors that said determining step determines is

not indicative of said high risk of said individual utilizing said healthcare services at said predetermined level within said prospective time span.] the first dichotomous value is a “1” and the second dichotomous value is a “0”.

9. The method of claim 1, wherein dichotomous values are assigned to each of the values in said set of predictive factors and said generating step comprises the step of: generating, based upon said [separate] values assigned to said set of predictive factors and a logistic regression formula of said predictive model, said risk level of said individual utilizing said healthcare services at said predetermined level within said prospective time span.

10. The method of claim 1, wherein dichotomous values are assigned to each of the values in said set of predictive factors and said generating step comprises the step of:

generating, based upon said [separate] values assigned to said set of predictive factors and a logistic regression formula of said predictive model, a probability value indicative of said risk level of said individual utilizing said healthcare services at said predetermined level within said prospective time span; and

determining, based upon said probability value and a predetermined threshold, said risk level of said individual utilizing said healthcare services at said predetermined level within said prospective time span.

11. (Amended) A healthcare management system, comprising:  
a processor, and  
memory operably coupled to said processor, said memory comprising a plurality of instructions that when executed by said processor cause said processor to  
[assign, based upon information from an individual, a separate value to each predictive factor of a set of predictive factors, and]  
determine, based upon said information, whether a first predictor factor is indicative of a high risk of an individual utilizing said healthcare services at a predetermined level within a prospective time span;

assign, based upon said information, a first dichotomous value to a separate value for said first predictive factor if the processor determines that said first predictor factor is indicative of said high risk of said individual utilizing said healthcare services at said predetermined level within said prospective time span;

assign, based upon said information, a second dichotomous value to said separate value for said first predictive factor if said determining step determines that said first predictor factor is not indicative of said high risk of said individual utilizing said healthcare services at said predetermined level within said prospective time span; and

generate, based upon a predetermined predictive model and said separate values assigned to said predetermined set of predictive factors, a risk level of said individual utilizing healthcare services at a predetermined level within a prospective time span.

15. (Amended) The healthcare management system of claim 11, wherein dichotomous values are assigned to each of the values in said set of predictive factors and said plurality of instructions of said memory, when executed by said processor, further cause said processor to

generate, based upon a logistic regression formula of said predictive model and said [separate] values assigned to said set of predictive factors, said risk level of said individual utilizing said healthcare services at said predetermined level within said prospective time span.

16. (Amended) A computer readable medium for a healthcare management system, comprising a plurality of instructions that when executed by said healthcare management system causes said healthcare management system to:

assign, based upon information from an individual, a separate value to each predictive factor of a set of predictive factors,

determine, based upon said information, whether each predictive factor of said set of predictive factors is indicative of a high risk of said individual utilizing said healthcare services at said predetermined level within said prospective time span;

assign, based upon said information, a separate first dichotomous value to each predictive factor of said set of predictive factors that said determining step determines is indicative of said high risk of said individual utilizing said healthcare services at said predetermined level within said prospective time span;

assign, based upon said information, a separate second dichotomous value to each predictive factor of said set of predictive factors that said determining step determines is not indicative of said high risk of said individual utilizing said healthcare services at said predetermined level within said prospective time span, and



generate, based upon a predetermined predictive model and said [separate] values assigned to said predetermined set of predictive factors, a risk level of said individual utilizing healthcare services at a predetermined level within a prospective time span.

25. (Amended) The system of claim 11, wherein the risk level generated is a risk level of said individual utilizing healthcare services at a predetermined level [with] within a prospective time span between a present date and a first reference date.